CLAIMS

We claim:

1. A method of treating a subject having a disorder or condition characterized by an unwanted immune response comprising administering an effective amount of an early activation molecule agonist to the subject.

2. The method of claim 1, wherein the early activation molecule agonist increases the signaling through the early activation molecule or increases interaction with its ligand or receptor.

3. The method of claim 1, wherein the early activation molecule agonist increases TGF-β production.

4. The method of claim 1, wherein said agonist is a CD69 agonist.

5. The method of claim 4, wherein said agonist is an agonistic anti-CD69 antibody molecule.

6. The method of claim 5, wherein said agonist is an agonistic anti-CD69 antibody molecule selected from the group consisting of: a humanized anti-CD69 antibody molecule, a human anti-CD69 antibody molecule, a chimeric anti-CD69 antibody molecule and a deimmunized anti-CD69 antibody molecule.

7. The method of claim 6, wherein said human anti-CD69 antibody molecule is a monoclonal antibody.

8. The method of claim 1, wherein said agonist is an AICL agonist.

9. The method of claim 8, wherein said agonist is an agonistic anti-AICL antibody molecule.

10. The method of claim 9, wherein said agonist is an agonistic anti-AICL antibody molecule selected from the group consisting of: a humanized anti-AICL antibody molecule, a human anti-AICL antibody molecule, a chimeric anti-AICL antibody molecule and a deimmunized anti-AICL antibody molecule.

11. The method of claim 1, wherein said agonist is a LLT1 agonist.

12. The method of claim 11, wherein said agonist is an agonistic anti-LLT1 antibody molecule.

13. The method of claim 12, wherein said agonist is an agonistic anti-LLT1 antibody molecule selected from the group consisting of: a humanized anti-LLT1 antibody molecule, a human anti-LLT1 antibody molecule, a chimeric anti-LLT1 antibody molecule and a deimmunized anti-LLT1 antibody molecule.

14. The method of claim 1, wherein said disorder is an acute or chronic inflammatory disorder, or an immune disorder.

15. The method of claim 14, wherein said disorder is an autoimmune disorder.

16. The method of claim 1, wherein the disorder is selected from the group consisting of: rheumatoid arthritis, systemic lupus erythematosus, scleroderma, Sjögren syndrome, autoimmune diabetes, thyroiditis, and other organo-specific immune diseases, including psoriasis.

17. The method of claim 1, wherein the disorder is a neurological disorder, a gastrointestinal disorder, a cardiovascular disorder or a respiratory disorder.

18. The method of claim 17, wherein the disorder is a neurological disorder and the neurological disorder is selected from the group consisting of: multiple sclerosis, myasthenia gravis, and other neurological immune-mediated diseases.

19. The method of claim 17, wherein the disorder is a gastrointestinal disorder and the gastrointestinal disorder is selected from the group consisting of Crohn's disease, colitis, celiac disease, and hepatitis.

20. The method of claim 17, wherein the disorder is a respiratory disorder and the respiratory disorder is selected from the group consisting of: emphysema, and respiratory airways infections.

21. The method of claim 17, wherein the disorder is a cardiovascular disorder and the cardiovascular disorder is selected from the group consisting of: atherosclerosis, cardiomyopathy, rheumatic fever, endocarditis, vasculitis, and other immune-mediated diseases.

22. The method of claim 1, wherein the disorder is an allergic processes or a hypersensitivity reactions (type I, II, III, and IV), including asthma, rhinitis, and other immune-mediated hypersensitivity reactions.

23. The method of claim 1, wherein the disorder is transplant or graft rejection.

24. The method of claim 1, wherein said disorder or condition is: acute lung injury, acute respiratory distress syndrome, bronchitis, cystic fibrosis, reperfusion injury, nephritis, pancreatitis, artery occlusion, stroke, ultraviolet light induced injury, vasculitis, and sarcoidosis.

25. A method of treating a subject in need of, or which would benefit from, an increased or augmented immune response comprising administering an effective amount of an early activation molecule antagonist to the subject.

26. The method of claim 25, wherein the early activation molecule antagonist decreases signaling of an early activation molecule, decreases interaction of an early activation polypeptide with an early activation polypeptide receptor or ligand, or decrease expression of an early activation polypeptide on a cell surface.

27. The method of claim 25, wherein the early activation molecule antagonist decreases expression of TGF-9.

28. The method of claim 25, wherein the antagonist is a CD69 antagonist.

29. The method of claim 28, wherein said CD69 antagonist is an antagonistic anti-CD69 antibody molecule.

30. The method of claim 29, wherein said CD69 antagonist is an antagonistic anti-CD69 antibody molecule selected from the group consisting of: a humanized anti-CD69 antibody molecule, a human anti-CD69 antibody molecule, a chimeric anti-CD69 antibody molecule and a deimmunized anti-CD69 antibody molecule.

31. The method of claim 30, wherein said human anti-CD69 antibody molecule is a monoclonal antibody.

32. The method of claim 25, wherein said antagonist is an AICL antagonist.

33. The method of claim 32, wherein said antagonist is an antagonistic anti-AICL antibody molecule.

34. The method of claim 33, wherein said antagonist is an antagonistic anti-AICL antibody molecule selected from the group consisting of: a humanized anti-AICL antibody molecule, a human anti-AICL antibody molecule, a chimeric anti-AICL antibody molecule and a deimmunized anti-AICL antibody molecule.

35. The method of claim 25, wherein said antagonist is a LLT1 antagonist.

36. The method of claim 35, wherein said antagonist is an antagonistic anti-LLT1 antibody molecule.

37. The method of claim 36, wherein said antagonist is an antagonistic anti-LLT1 antibody molecule selected from the group consisting of: a humanized anti-LLT1 antibody molecule, a human anti-LLT1 antibody molecule, a chimeric anti-LLT1 antibody molecule and a deimmunized anti-LLT1 antibody molecule.

38. The method of claim 25, wherein said disorder is characterized by a decreased immune response.

39. The method of claim 25, wherein said disorder is characterized by unwanted cells or tissue or characterized by unwanted cell proliferation.

40. The method of claim 25, wherein said disorder is cancer.

41. The method of claim 25, wherein the disorder is fibrosis.

42. The method of claim 25, wherein the disorder is an immunodeficiency disorder.

43. The method of claim 42, wherein the immunodeficiency disorder is selected from the group consisting of: inherited immunodeficiency disorders, acquired immunodeficiency disorders, immunosuppression syndrome associated with radiotherapy, and immunosuppression syndrome associated with chemotherapy.

44. A method of enhancing the immune response to an antigen comprising administering to a subject an effective amount of an antigen and/or DNA encoding an

antigen, and an early activation molecule antagonist, to thereby enhance immune response to the antigen by the subject.

45. The method of claim 44, wherein said antigen is comprised in a vaccine.

46. The method of claim 44, wherein said antagonist is a CD69 antagonist.

47. The method of claim 46, wherein said CD69 antagonist is an antagonistic anti-CD69 antibody molecule.

48. The method of claim 47, wherein said CD69 antagonist is an antagonistic anti-CD69 antibody molecule selected from the group consisting of: a humanized anti-CD69 antibody molecule, a human anti-CD69 antibody molecule, a chimeric anti-CD69 antibody molecule and a deimmunized anti-CD69 antibody molecule.

49. The method of claim 48, wherein said human anti-CD69 antibody molecule is a monoclonal antibody.

50. The method of claim 44, wherein said antagonist is an AICL antagonist.

51. The method of claim 50, wherein said antagonist is an antagonistic anti-AICL antibody molecule.

52. The method of claim 51, wherein said antagonist is an antagonistic anti-AICL antibody molecule selected from the group consisting of: a humanized anti-AICL antibody molecule, a human anti-AICL antibody molecule, a chimeric anti-AICL antibody molecule and a deimmunized anti-AICL antibody molecule.

53. The method of claim 44, wherein said antagonist is a LLT1 antagonist.

54. The method of claim 53, wherein said antagonist is an antagonistic anti-LLT1 antibody molecule.

55. The method of claim 54, wherein said antagonist is an antagonistic anti-LLT1 antibody molecule selected from the group consisting of: a humanized anti-LLT1 antibody molecule, a human anti-LLT1 antibody molecule, a chimeric anti-LLT1 antibody molecule and a deimmunized anti-LLT1 antibody molecule.

56. A method of treating a subject having a disorder or condition characterized by an unwanted immune response comprising administering an effective amount of an early activation molecule depletor to the subject.

57. The method of claim 56, wherein said depletor is a CD69 depletor.

58. The method of claim 57, wherein said depletor is a depleting anti-CD69 antibody molecule.

59. The method of claim 58, wherein said depletor is a depleting anti-CD69 antibody molecule selected from the group consisting of: a humanized anti-CD69 antibody molecule, a human anti-CD69 antibody molecule, a chimeric anti-CD69 antibody molecule and a deimmunized anti-CD69 antibody molecule.

60. The method of claim 59, wherein said human anti-CD69 antibody molecule is a monoclonal antibody.

61. The method of claim 56, wherein said depletor is an AICL depletor.

62. The method of claim 61, wherein said depletor is a depleting anti-AICL antibody molecule.

63. The method of claim 62, wherein said depletor is a depleting anti-AICL antibody molecule selected from the group consisting of: a humanized anti-AICL antibody molecule, a human anti-AICL antibody molecule, a chimeric anti-AICL antibody molecule and a deimmunized anti-AICL antibody molecule.

64. The method of claim 56, wherein said depletor is a LLT1 depletor.

65. The method of claim 64, wherein said depletor is a depleting anti-LLT1 antibody molecule.

66. The method of claim 65, wherein said depletor is a depleting anti-LLT1 antibody molecule selected from the group consisting of: a humanized anti-LLT1 antibody molecule, a human anti-LLT1 antibody molecule, a chimeric anti-LLT1 antibody molecule and a deimmunized anti-LLT1 antibody molecule.

67. The method of claim 56, wherein said disorder is an acute or chronic inflammatory disorder, or an immune disorder.

68. The method of claim 67, wherein said disorder is an autoimmune disorder.

69. The method of claim 56, wherein the disorder is selected from the group consisting of: rheumatoid arthritis, systemic lupus erythematosus, scleroderma, Sjögren syndrome, autoimmune diabetes, thyroiditis, and other organo-specific immune diseases, including psoriasis.

70. The method of claim 56, wherein the disorder is a neurological disorder, a gastrointestinal disorder, a cardiovascular disorder or a respiratory disorder.

71. The method of claim 70, wherein the disorder is a neurological disorder and the neurological disorder is selected from the group consisting of: multiple sclerosis, myasthenia gravis, and other neurological immune-mediated diseases.

72. The method of claim 70, wherein the disorder is a gastrointestinal disorder and the gastrointestinal disorder is selected from the group consisting of Crohn's disease, colitis, celiac disease, and hepatitis.

73. The method of claim 70, wherein the disorder is a respiratory disorder and the respiratory disorder is selected from the group consisting of: emphysema, and respiratory airways infections.

74. The method of claim 70, wherein the disorder is a cardiovascular disorder and the cardiovascular disorder is selected from the group consisting of: atherosclerosis, cardiomyopathy, rheumatic fever, endocarditis, vasculitis, and other immune-mediated diseases.

75. The method of claim 56, wherein the disorder is an allergic process or a hypersensitivity reaction (type I, II, III, and IV), including asthma, rhinitis, and other immune-mediated hypersensitivity reactions.

76. The method of claim 56, wherein the disorder is transplant or graft rejection.

77. The method of claim 56, wherein said disorder or condition is: acute lung injury, acute respiratory distress syndrome, asthma, bronchitis, cystic fibrosis, reperfusion injury, nephritis, pancreatitis, artery occlusion, stroke, transplantation, ultraviolet light induced injury, vasculitis, and sarcoidosis.

78. A method of treating a subject having an early activation molecule expressing cancer comprising administering an effective amount of an early activation molecule depletor to the subject.

79. The method of claim 78, wherein the depletor is a CD69 depletor.

80. The method of claim 79, wherein said depletor is a depleting anti-CD69 antibody molecule.

81. The method of claim 80, wherein said depletor is a depleting anti-CD69 antibody molecule selected from the group consisting of: a humanized anti-CD69 antibody molecule, a human anti-CD69 antibody molecule, a chimeric anti-CD69 antibody molecule and a deimmunized anti-CD69 antibody molecule.

82. The method of claim 81, wherein said human anti-CD69 antibody molecule is a monoclonal antibody.

83. The method of claim 78, wherein the depletor is an AICL depletor.

84. The method of claim 83, wherein said depletor is a depleting anti-AICL antibody molecule.

85. The method of claim 84, wherein said depletor is a depleting anti-AICL antibody molecule selected from the group consisting of: a humanized anti-AICL antibody molecule, a human anti-AICL antibody molecule, a chimeric anti-AICL antibody molecule and a deimmunized anti-AICL antibody molecule.

86. The method of claim 78, wherein the depletor is a LLT1 depletor.

87. The method of claim 86, wherein said depletor is a depleting anti-LLT1 antibody molecule.

88. The method of claim 87, wherein said depletor is a depleting anti-LLT1 antibody molecule selected from the group consisting of: a humanized anti-LLT1 antibody molecule, a human anti-LLT1 antibody molecule, a chimeric anti-LLT1 antibody molecule and a deimmunized anti-LLT1 antibody molecule.

89. The method of claim 78, wherein the early activation molecule expressing cancer is selected from the group consisting of: hematopoietic neoplastic disorders, including diseases involving hyperplastic/neoplastic cells of hematopoietic origin, such as: lymphoma and a lymphocytic leukemia.

90. The method of claim 89, wherein the early activation molecule expressing cancer is a lymphoma and the lymphoma is selected from the group consisting of: a T-cell lymphoma (including peripheral T cell lymphomas, adult T cell leukemia/lymphoma (ATL), cutaneous T-cell lymphoma (CTCL), large granular lymphocytic leukemia (LGF)), a B-cell lymphoma, a Hodgkin's lymphoma and a non-Hodgkin's lymphoma.

91. The method of claim 89, wherein the early activation molecule expressing cancer is a lymphocytic leukemia and the lymphocytic leukemia is selected from the group consisting of: poorly differentiated acute leukemias, e.g., acute megakaryoblastic leukemia; myeloid disorders, including, but not limited to, acute promyeloid leukemia (APML), acute myelogenous leukemia (AML) and chronic myelogenous leukemia (CML); lymphoid malignancies, including, but not limited to acute lymphoblastic leukemia (ALL) which includes B-lineage ALL and T-lineage ALL, chronic lymphocytic leukemia (CLL), prolymphocytic leukemia (PLL), hairy cell leukemia (HLL) and Waldenstrom's macroglobulinemia (WM).

92. The method of claim 89, wherein the early activation molecule expressing cancer is a non-hematopoietic tumor that may express the early activation molecule ectopically.

93. The method of claim 91, wherein the lymphocytic leukemia is B-cell chronic lymphocytic leukemia lacking immunoglobulin mutations.

94. The method of claim 93, wherein the depletor is an AICL depletor.

95. A method of treating a subject having an early activation molecule expressing lymphocytic leukemia comprising administering an effective amount of an early activation molecule antagonist to the subject.

96. The method of claim 95, wherein the lymphocytic leukemia is B-cell chronic lymphocytic leukemia lacking immunoglobulin mutations.

97. The method of claim 95, wherein the early activation molecule antagonist decreases signaling of an early activation molecule, decreases interaction of an early activation polypeptide with an early activation polypeptide receptor or ligand, or decreases expression of an early activation polypeptide on a cell surface.

98. The method of claim 96, wherein the antagonist is an AICL antagonist.

99. The method of claim 98, wherein said AICL antagonist is an antagonistic anti-AICL antibody molecule.

100. The method of claim 99 wherein said AICL antagonist is an antagonistic anti-AICL antibody molecule selected from the group consisting of: a humanized anti-AICL antibody molecule, a human anti-AICL antibody molecule, a chimeric anti-AICL antibody molecule and a deimmunized anti-AICL antibody molecule.

101. A kit for detecting an early activation molecule in a biological sample, said kit comprising:

a) a container comprising a monoclonal antibody specific against the early activation molecule; and

b) instructions for using the monoclonal antibody for the purpose of binding to the early activation molecule to form an immunological complex and detecting said complex such that the presence or absence of the complex correlates to the presence or absence of the early activation molecule in said biological sample.

102. The kit of claim 101, wherein said biological sample is selected from the group consisting of biological fluid and animal tissue.

103. The kit of claim 102, wherein said biological sample is from a human.

104. The kit of claim 101, wherein said monoclonal antibody is a human monoclonal antibody.

105. A method of treating a subject having a disorder or condition charcaterized by an unwanted immune response comprising administering an effective amount of an antibody specific for an early activation molecule to the subject, alone or conjugated to a second therapeutic agent.

106. The method of claim 105, wherein said second therapeutic agent is selected from the group consisting of: chemotherapeutic agents; radioisotopes; and cytotoxins.

107. The method of claim 105, wherein the antibody is a monoclonal antibody.

108. The method of claim 107, wherein the monoclonal antibody is a human antibody.